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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,913	11/20/2001	Theresa M. Buckley	BUC1073C2	2206

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EXAMINER

ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
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1773

8

DATE MAILED: 10/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

09/989,913

Applicant(s)

BUCKLEY, THERESA M.

Examiner

Ramsey Zacharia

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-- The MAILING DATE of this communication appears n the cover sheet with the corresp ndence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,6 . 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection. Support for the added limitation that the phase transition temperature of the phase change material is equal to or less than 82 °F could not be found in the disclosure as originally filed. The range 'equal to or less than 82 °F' means 82 °F or any temperature below this including 0 °F or less. The disclosure as originally filed does not contain any support for temperatures at the lower range of the range as now claimed.

#### ***Claim Rejections - 35 USC § 102***

4. Claims 1, 5, 8-11, 13-15, and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hearst et al. (U.S. Patent 3,536,058).

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Hearst et al. teach a protective suit comprising a chemical that will supply heat as it undergoes phase change from a solid to a liquid incorporated into an open-celled layer of the protective suit (column 1, lines 70-75). The protective suit may be a wet suit (column 1, lines 19-24). The suit comprises inner and outer layers surrounding and encapsulating the open-celled layer (Figure 3 and column 2, lines 49-56). The chemical absorbs and retains heat from the wearer thereby keeping the suit at a constant temperature and reducing heat loss from the wearer (column 3, lines 9-14). This will provide a thermal environment at a constant temperature above the ambient environmental temperature for an extended period of time. The thermal mass of the chemical is taken to be at least equal to the difference between the heat loss from the thermal storage material to the ambient environment and the heat absorbed from the wearer, otherwise the chemical would not be able to keep the suit at a constant temperature.

The chemical is a combination of crystallizable material and a freezing point depressant, such as water, which will progressively decrease the freezing point of the remaining liquid chemical (column 3, lines 15-24). Therefore, if lithium nitrate trihydrate (melting temperature of 86 °F) is used as the crystallizable material, the chemical will have a continuum of transition temperatures from 86 °F (the onset of freezing of the lithium nitrate trihydrate) to 32 °F (the freezing point of the water depressant), including transition temperatures of 50, 60, and 71 °F.

5. Claims 1, 2, 4, 5, 8, 9, 11-13, and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bryant et al. (U.S. Patent 4,756,958).

Bryant et al. teach a fabric comprising a fiber having microcapsules encapsulating one or more phase change materials (column 2, lines 25-42). The phase change material may be a

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paraffin hydrocarbon exhibiting a solid-liquid transition or a plastic crystal exhibiting a solid-solid transition at or below room temperature (column 3, lines 23-55). The fabric may be formed into items of clothing (column 4, lines 37-42). Bryant et al. disclose phase change materials having a transition temperature of from -5.5 to 61.4 °C, i.e. about 22 to 142 °F (column 3, lines 40-55). Specific examples of transition temperatures including 10 °C, 18.2 °C, and 22 °C, which are about 50, 64, and 72 °F, respectively.

6. Claims 1, 5-9, 11, 13-15, 17, 18, and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Salyer (U.S. Patent 5,106,520) as evidenced by Bruemmer et al. (U.S. Patent 5,176,672).

Salyer teaches free flowing particles of silica with phase change material absorbed into the silica that may be incorporated into garments (column 2, lines 10-27). The garment may be a jacket (Figure 6). Alkyl hydrocarbons having a chain length of C<sub>14</sub> and greater are the preferred phase change material, these exhibit a solid-liquid transition (column 4, lines 11-20). The transition temperatures of these materials range from 0 to 33 °C, i.e. about 32 to 91 °F (column 5, lines 35-44). In garment applications, the silica particles are encapsulated in pouches (Figure 7 and column 8, lines 49-59). This reads on claims 8 and 11 as well as claim 9 (the pouches are taken to be flexible since they are designed to conform to the wearer). The liquid impervious enclosure and/or the pouch portions are taken to read on the thermal control layer of claim 14 and the insulative layer of claim 15 since they are both between the phase change material and the wearer as well as between the phase change material and the ambient environment. Silica is

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taken to be a superabsorbent material that reads on claim 7 since Bruemmer et al. discloses that silica is considered a superabsorbent material (column 8, lines 30-33).

7. Claims 1, 5, 9, 10, 11, 13-16, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Feldman (U.S. Patent 2,515,298).

Feldman teaches a device for keeping a portion of the human body warm (column 1, lines 1-4). The device may be a hand warming gauntlet, i.e. an article of clothing (Figures 1-5 and column 4, lines 50-59). The device comprises a layer of sponge rubber, i.e. a foam, having its interstitial spaces filled with phase change material, an envelope surrounding the sponge rubber layer, and an insulating layer on the outer side of the sponge rubber layer (column 3, lines 4-44). The general range for the melting temperature of the phase change material is 28-45 °C, i.e. a lower limit of about 82 °F (column 3, lines 4-9).

The envelope reads on the thermal control layer of claims 14 and 16. The insulating layer on the outer side of the sponge rubber layer reads on the insulative layer of claims 15 and 16.

***Claim Rejections - 35 USC § 103***

8. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. (U.S. Patent 4,756,958).

Bryant et al. teach a fabric comprising a fiber having microcapsules encapsulating one or more phase change materials (column 2, lines 25-42). The phase change material may be a

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paraffin hydrocarbon exhibiting a solid-liquid transition or a plastic crystal exhibiting a solid-solid transition (column 3, lines 23-55).

Bryant et al. do not teach using the fabric to form a shirt, jacket, trousers, a blanket, a gaiter, a facial mask, a hat, an earmuff, or a liner. However, the fabric may be formed into items of clothing, such as gloves or shoes (column 4, lines 37-42).

Shirts, jackets, trousers, and liners (such as socks) are typically made from fabric and constitute items of clothing akin to gloves and shoes. Because shirts, jackets, trousers, socks, gloves and shoes are in the same family of items, one of ordinary skill in the art would have found it obvious to use the fabric of Bryant et al. to construct any common article of clothing including shirts, jackets, trousers or socks.

Therefore, the inventions of claims 17 and 18 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

### ***Response to Arguments***

9. Applicant's arguments filed September 16, 2002 have been fully considered but they are not persuasive.

Regarding the rejection over Hearst et al., the applicant argues that the phase change material used by Hearst et al. has a transition temperature of 86 °F and is therefore outside the range as claimed.

This is not persuasive because Hearst et al. teach a combination of a crystallizable material having a transition temperature of 86 °F and a freezing point depressant, such as water, as the chemical. This results in a chemical that will have a continuum of transition temperatures

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from 86 °F (the onset of freezing of the lithium nitrate trihydrate) to 32 °F (the freezing point of the water depressant), including transition temperatures of 50, 60, and 71 °F.

Regarding the rejection over Bryant et al. ('958), the applicant argues that although phase change materials with lower transition temperatures are disclosed, it is only for use in body cooling in a hot environment. This is in contrast to the instant invention that is said to provide a novel and non-obvious method of protecting a user by providing a phase change material with a transition temperature between the skin temperature and the ambient environmental temperature.

This is not persuasive for the following reasons. Bryant et al. teach a fabric that may be formed into footwear that meets all the structural limitations of the instant invention as claimed. That the footwear is used for body cooling or body heating is merely an intended use of the article. The courts have held that a recitation with respect to the manner in which a claimed invention is intended to be employed does not differentiate the claimed invention from a prior art invention satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Therefore, while the applicant may have discovered a novel and non-obvious method of protecting a user, the claims are drawn to an article that is structurally the same as that of the prior art.

Regarding the rejection of Sayler, the applicant argues that Sayler does not disclose an article for protecting a user by providing a phase change material with a transition temperature between the skin temperature and the ambient environmental temperature.

This is not persuasive because, as outlined above, the garment of Sayler appears to meet all the structural limitations of the invention as claimed. Whether the garment of Sayler is intended to be used in the same manner as that of the instant invention is not at issue since the



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claims are directed to a product and the courts have held that a recitation with respect to the manner in which a claimed invention is intended to be employed does not differentiate the claimed invention from a prior art invention satisfying the claimed structural limitations.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (703) 305-0503. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the

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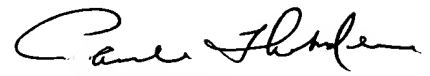
organization where this application or proceeding is assigned is (703) 872-9310 for non after-final correspondences and (703) 872-9311 for after-final correspondences.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

REZ

Ramsey Zacharia

10/7/02



Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700